

REMARKS

The Office action has been carefully considered. Claims 1-24 are now pending. The Office action rejected claims 1-21 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,577,299 to Schiller et al. ("Schiller") in view of that which the Office action contends is well-known in the industry such as the teachings of U.S. Patent No. 3,577,022 to Hasinger ("Hasinger"). Applicants respectfully disagree.

By present amendment, claims 12 and 14 have been amended for clarification and not in view of the prior art. Claims 22-24 have been added as new. Applicants submit that the claims as filed were patentable over the prior art of record, and that the amendments herein are for purposes of clarifying the claims and/or for expediting allowance of the claims and not for reasons related to patentability. Reconsideration is respectfully requested.

Applicants thank the Examiner for the interview held (by telephone) on April 12, 2004. During the interview, the Examiner and applicants' attorney discussed the claims with respect to the prior art. The essence of applicants' position is incorporated in the remarks below.

Prior to discussing reasons why applicants believe that the claims in this application are clearly allowable in view of the teachings of the cited and applied references, a brief description of the present invention is presented.

The present invention is directed to an electronic module that may be inserted into a pen or other writing instrument such that the physical movements of the pen may be detected, transmitted to a remote computer, and then recorded in a

format such as digital ink representation. The physical movements of the pen may be detected by the electronic module by using a ballistic generator such as an accelerometer to determine the relative, directional acceleration and deceleration of the pen. The detected movement information is transmitted via a transmitter in the electronic module to a remote computer. The transmitter and ballistic generator are controlled by a microcontroller, also within the electronic module.

In one embodiment, the electronic module is configured to fit inside an ink cartridge chamber of a pen in place of a secondary or backup ink cartridge. In another embodiment, the electronic module is configured to be disposed inside any suitable chamber of the pen. The pen, or similar writing device, is able to still function as a conventional writing device. In this manner, not only are the physical movements of the pen detected and recorded by the electronic module in conjunction with a remote computer, the actual writing is written to a page upon which the user of the pen is writing.

Note that the above description is for example and informational purposes only, and should not be used to interpret the claims, which are discussed below.

Turning to the claims, claim 1 recites a device for sensing writing movement, comprising, an electronic module configured to be received within a writing instrument, comprising a ballistic generator that is configured to generate movement information resulting from writing movements, and a transmitter that is configured to transmit the movement information to a remote computer.

The Office action rejected claim 1 as being unpatentable over Schiller in view of Hasinger. More specifically, the Office action contends that Schiller

teaches a device for sensing writing movement. Column 5, lines 60-61 of Schiller are referenced. Further, the Office action contends that Schiller teaches an electronic module configured to be received within a writing instrument. Column 3, lines 21-22 and lines 37-43 of Schiller are referenced. Further yet, the Office action contends that Schiller teaches a device that is configured to generate movement information resulting from the writing movements. Column 3, lines 55-58 of Schiller are referenced. Finally, the Office action contends that Schiller teaches a transmitter that is configured to transmit the movement information to a remote computer. Column 7, lines 29-32 of Schiller are referenced.

The Office action acknowledges that Schiller does not teach a ballistic generator. However, the Office action contends that ballistic generators are well known in the industry such as the ballistic generator taught by Hasinger. The Office action then concludes that the recitations of claim 1 would have been obvious to a person skilled in the art at the time invention was made based on the combination of the teachings of Schiller with the teachings of Hasinger because the combination of references teaches converting kinetic energy into electrical energy. Applicants respectfully disagree.

Schiller teaches, generally, a device that is capable of determining its own position and movement information relative to a stationary point near the device. That is, all movement information determined results from measuring the position of the device relative to some outside point, such as a pen cap or clip. See column 3, lines 20-33. The device includes a writing instrument having a ball-point cartridge interconnected with a pressure switch that is capable of sending

electronic signals to a microprocessor that are based upon pressure from writing. See column 3, lines 34-40. The device further includes other internal devices and circuitry for sending and receiving position and movement information, each of which make up some portion of the device itself. See column 3, lines 41-54. As such, Schiller fails to teach several of the recitations of claim 1.

First, claim 1 recites an electronic module configured to be received within a writing instrument. That is, the electronic module is a self-contained unit that may be inserted or removed freely from a writing instrument regardless of which writing instrument within which it may be received. In contrast, Schiller teaches a device that is not configured to be received by a writing instrument. Rather, Schiller teaches a writing instrument having several electronic components incorporated within the device. Each of these electronic components (*i.e.*, the microprocessor, the processing circuitry, the pressure switch, *etc.*) work in conjunction with each other to determine movement information about the device. If any electronic component (or even all of the electronic components collectively) were removed from the “writing instrument” portion of the device, the electronic components would cease to function properly. For example, the pressure switch only works in conjunction with the ball-point cartridge. Thus, it is clear that the concept taught by Schiller is to provide a writing device with integrated electronics for determining movement information.

Even if one were to equate (purely for the sake of argument as applicants specifically deny any similarity) the various electronic components of Schiller to the electronic module of the present invention, the writing instrument taught by Schiller

still determines movement information in a different manner (via relative wireless transmissions) than the manner of the present invention (via a ballistic generator). Simply stated, Schiller does not teach an electronic module configured to be received by a writing device as is recited in claim 1.

Second, claim 1 recites a transmitter that is configured to transmit the movement information to a remote computer. The cited and applied section of Schiller teaches a transmitter (transducer) that sends ultrasonic signals to determine the movement information and relative position of the device. Upon receiving an echo, the relative position of the pen can be determined. That is, the transmitter of Schiller is used to determine the movement information as opposed to transmitting the already determined movement information to a remote location, such as a remote computer. As such, Schiller does not teach a transmitter that is configured to transmit the movement information to a remote computer as recited in claim 1.

Third, as correctly acknowledged by the Office action, the manner in which the device of the present invention determines its movement information (*i.e.*, by using a ballistic generator) is not taught anywhere in Schiller. The Office action, however, contends that a ballistic generator is well known as evidenced by the reference to Hasinger. Simply put, Hasinger is directed to an unrelated concept of transforming kinetic energy into electrical energy.

Hasinger teaches, generally, a *thermo*-ballistic generator for transforming kinetic energy of a high-pressure, high-temperature gas fluid in a conversion space into electrical energy when the gas fluid interacts to a volume, temperature and/or

pressure change. Such a thermo-ballistic generator may be practiced in missile or projectile flight control. As such, the teachings of Hasinger are non-analogous and one skilled in the art of electronic writing devices would not look to ballistic missile technology for determining movement information of a writing instrument. Further, the technology and precision required for the thermo-ballistic reaction chamber taught by Hasinger would be impractical for a writing device because of the high-cost, complexity, size, and inherent danger. There is no motivation to combine the teachings of Schiller with the teachings of Hasinger to arrive at the recitations of claim 1.

Bear in mind that, as a matter of law, obviousness may not be established using hindsight obtained in view of the teachings or suggestions of the applicants. *W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1551, 1553, 220 USPQ 303, 311, 312-13 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). To guard against the use of such impermissible hindsight, obviousness needs to be determined by ascertaining whether the applicable prior art contains any suggestion or motivation for making the modifications in the design of the prior art article in order to produce the claimed design. The mere possibility that a prior art teaching could be modified or combined such that its use would lead to the particular limitations recited in a claim does not make the recited limitation obvious, unless the prior art suggests the desirability of such a modification. See *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984).

Applicants submit that claim 1 is allowable over the prior art of record for at least the foregoing reasons.

Applicants respectfully submit that dependent claims 2-7, by similar analysis, are also allowable. Each of these claims depends either directly or indirectly from claim 1 and consequently includes the recitations of independent claim 1. As discussed above, Schiller fails to disclose the recitations of claim 1 and, therefore, these claims are also allowable over the prior art of record. In addition to the recitations of claim 1 noted above, each of these dependent claims includes additional patentable elements.

For example, claim 5 recites that the electronic module is configured to fit within a cavity that is configured to receive an ink cartridge for the writing instrument. As discussed above, Schiller does not teach nor show any appreciation of an electronic module configured to be received by a writing instrument, let alone one configured to fit within a cavity that is configured to receive an ink cartridge for the writing instrument. Applicants submit that claim 5 is allowable over the prior art of record for at least this additional reason.

As another example, claim 6 recites that the writing instrument is a pen that is configured to receive two ink cartridges, and the electronic module is configured to be inserted in place of one of the cartridges. Again, Schiller does not teach nor show any appreciation of an electronic module configured to be received by a writing instrument, let alone one configured to fit within a place that is configured to receive one of two ink cartridges for the writing instrument. Applicants submit that claim 6 is allowable over the prior art of record for at least this additional reason.

Turning to the next independent claim, claim 8 recites an electronic module, comprising means for attaching the electronic module to a writing instrument, a

ballistic generator that is configured to generate movement information resulting from writing movements, and a transmitter that is configured to transmit the movement information to a remote computer.

The Office action rejected claim 8 as unpatentable over Schiller in view of Hasinger citing the same sections of Schiller that were cited with respect to claim 1. Similarly, the Office action acknowledges that Schiller does not teach a ballistic generator, but contends that Hasinger does as was also detailed above with respect to claim 1. Applicants respectfully disagree.

As was discussed above, Schiller fails to teach a means for attaching the electronic module to a writing instrument. Schiller simply teaches an electronic writing device in and of itself that does not attach to any other instrument. Further, neither Schiller nor Hasinger teach a ballistic generator that is configured to generate movement information resulting from writing movements. The thermo-ballistic generator in Hasinger is non-analogous art and teaches a thermo-ballistic generator that is different from the ballistic generator of the present invention. Finally, Schiller does not teach a transmitter that is configured to transmit the movement information to a remote computer. Rather Schiller teaches a transmitter for determining the movement information in the first place instead of communicating the movement information to a remote computer.

Applicants submit that claim 8 is allowable over the prior art of record for at least the foregoing reasons.

Applicants respectfully submit that dependent claims 8-11, by similar analysis, are also allowable. Each of these claims depends either directly or

indirectly from claim 8 and consequently includes the recitations of independent claim 8. As discussed above, Schiller fails to disclose the recitations of claim 8 and, therefore, these claims are also allowable over the prior art of record. In addition to the recitations of claim 8 noted above, each of these dependent claims includes additional patentable elements.

Turning to the next independent claim, amended claim 12 recites a device for sensing writing movement, comprising, an electronic module configured to be received within a cavity in the writing instrument that is configured to receive one of a plurality of cartridges, comprising, a ballistic generator configured to generate movement information resulting from writing movements of the writing instrument.

The Office action rejected claim 12 as being unpatentable over Schiller in view of Hasinger. Again, the Office action cites the same sections of Schiller that were cited with respect to claims 1 and 8. Similarly, the Office action acknowledges that Schiller does not teach a ballistic generator but contends that Hasinger does as was also detailed above with respect to claim 1. Applicants respectfully disagree.

Again, as was discussed above, Schiller fails to teach an electronic module configured to be received within a cavity in the writing instrument that is configured to receive one of a plurality of cartridges. Schiller simply teaches an electronic writing device in and of itself that does not attach to any other instrument. Further, neither Schiller nor Hasinger teach a ballistic generator that is configured to generate movement information resulting from writing movements. The thermo-

ballistic generator in Hasinger is non-analogous art and teaches a thermo-ballistic generator that is different from the ballistic generator of the present invention.

Applicants submit that claim 12 is allowable over the prior art of record for at least the foregoing reasons.

Applicants respectfully submit that dependent claim 13, by similar analysis, is also allowable. Claim 13 depends directly from claim 12 and consequently includes the recitations of independent claim 12. As discussed above, Schiller fails to disclose the recitations of claim 12 and, therefore, claim 13 is also allowable over the prior art of record. In addition to the recitations of claim 12 noted above, dependent claim 13 includes additional patentable elements.

Turning to the next independent claim, amended claim 14 recites a writing instrument, comprising, an electronic module configured to be mounted within the writing instrument, comprising a ballistic generator that is configured to generate movement information resulting from writing movements of the writing instrument.

The Office action rejected claim 14 as being unpatentable over Schiller in view of Hasinger. Again, the Office action cites the same sections of Schiller that were cited with respect to claims 1, 8, and 12. Similarly, the Office action acknowledges that Schiller does not teach a ballistic generator but contends that Hasinger does as was also detailed above with respect to claim 1. Applicants respectfully disagree.

Again, as was discussed above, Schiller fails to teach an electronic module configured to be mounted within a writing instrument. Schiller simply teaches an electronic writing device in and of itself that does not attach to any other

instrument. Further, neither Schiller nor Hasinger teach a ballistic generator that is configured to generate movement information resulting from writing movements.

The thermo-ballistic generator in Hasinger is non-analogous art and teaches a thermo-ballistic generator that is different from the ballistic generator of the present invention.

Applicants submit that claim 14 is allowable over the prior art of record for at least the foregoing reasons.

Applicants respectfully submit that dependent claims 15-19, by similar analysis, are also allowable. Claims 15-19 depends either directly or indirectly from claim 14 and consequently include the recitations of independent claim 14. As discussed above, Schiller fails to disclose the recitations of claim 14 and, therefore, claims 15-19 are also allowable over the prior art of record. In addition to the recitations of claim 14 noted above, dependent claims 15-19 include additional patentable elements.

Turning to the last independent claim, claim 20 recites a method of providing electronic movement information to a client application, comprising generating, through an electronic module added to a writing instrument, movement information as a result of movement of the writing instrument, providing the electronic movement information to a computer that is remote of the writing instrument, filtering the electronic movement information to form filtered data, and providing the filtered data to a client application.

The Office action rejected claim 20 as unpatentable over Schiller. More specifically, the Office action contends that Schiller teaches a method of providing

electronic movement information to a client application. Column 4, lines 41-51 of Schiller are referenced. Further, the Office action contends that Schiller teaches generating, through an electronic module added to a writing instrument, movement information as a result of movement of the writing instrument. Column 3, lines 31-58 and column 6, lines 24-28 of Schiller are referenced. Still further, the Office action contends that Schiller teaches providing the electronic movement information to a computer that is remote of the writing instrument. Column 4, lines 41-51 of Schiller are referenced. Finally, the Office action contends that Schiller teaches filtering the electronic movement information from filtered data and providing the filtered data to a client application. Column 4, line 41 to column 5, line 11 of Schiller are referenced. Applicants respectfully disagree.

As was discussed above, Schiller fails to teach generating, through an electronic module added to a writing instrument, movement information as a result of movement of the writing instrument. Schiller teaches an electronic module that is integrated with the writing instrument and, as such, cannot be easily separated or added without disrupting the overall function of Schiller writing instrument.

Applicants submit that claim 20 is allowable over the prior art of record for at least the foregoing reasons.

Applicants respectfully submit that dependent claim 21, by similar analysis, is also allowable. Claim 21 depends directly from claim 20 and consequently includes the recitations of independent claim 20. As discussed above, Schiller fails to disclose the recitations of claim 20 and, therefore, claim 21 is also allowable

over the prior art of record. In addition to the recitations of claim 20 noted above, dependent claim 21 includes additional patentable elements.


For at least these additional reasons, applicants submit that all the claims are patentable over the prior art of record. Reconsideration and withdrawal of the rejections in the Office Action is respectfully requested and early allowance of this application is earnestly solicited.

CONCLUSION

In view of the foregoing remarks, it is respectfully submitted that claims 1-24 are patentable over the prior art of record, and that the application is in good and proper form for allowance. A favorable action on the part of the Examiner is earnestly solicited.

If in the opinion of the Examiner a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney at (425) 836-3030.

Respectfully submitted,



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